



Institut Royal Météorologique
Koninklijk Meteorologisch Instituut
Königliche Meteorologische Institut
Royal Meteorological Institute

GERB project status update

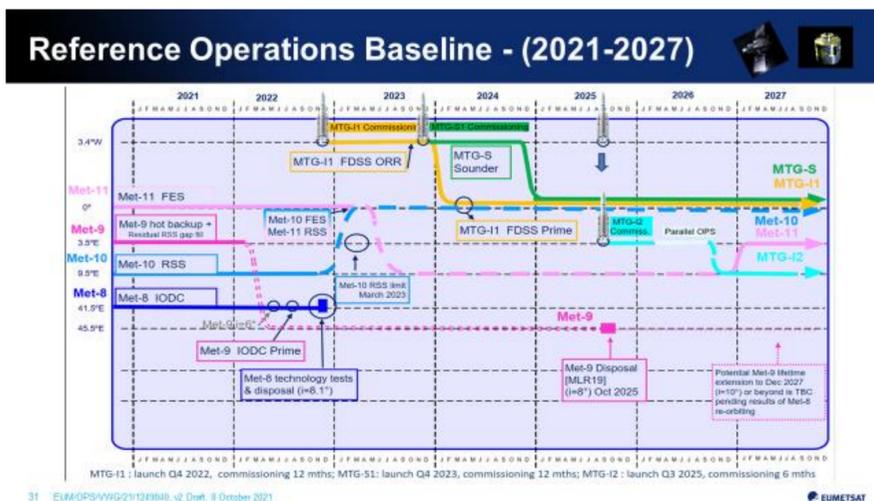
CERES Science Team Meeting, 28 April 2022

*Christine Aebi, Edward Baudrez, Nicolas Clerbaux, Pierre de Buyl, Johan Moreels (RMIB)
Martin Bates, Jacqueline Russell, Andy Smith (RAL)
Helen Brindley, James Rufus (ICL)*

edward.baudrez@meteo.be



MSG/GERB instrument status



The next Meteosat Lifetime Review is planned for November 2022.

	nominal longitude notes	radiometer notes
Meteosat-8	41.5°E will be decommissioned late 2022	GERB-2 end of service
Meteosat-9	45.5°E IODC mission from July 2022	GERB-1 off (orbital storage)
Meteosat-10	9.5°E secondary Rapid Scan Service	GERB-3 safe mode (orbital storage)
Meteosat-11	0° primary Full Earth Scan service	GERB-4 imaging

RMIB GERB L2 team



Christine Aebi



Edward Baudrez



Nicolas Clerboux



Pierre de Buyl



Johan Moreels

There have been a few changes to the RMIB GERB L2 team:

- Pierre de Buyl has joined the team in 2020.
- Alexandre Payez left the team in 2021.
- Edward is coordinating the RMIB GERB team since 2022.

Current work: software

The RMIB GERB Processing (RGP) software is an ageing code base, and a big update was needed.

The principal problem is **poor traceability**:

- divergent branches (unmerged development efforts for Edition 2, changes addressing instrument anomalies, etc.)
- unversioned data, config files

This makes it hard to attribute changes in the product to their cause.

The other priority is **automation**, as we are entering the final phase of the project.

Unfortunately, none of this is user-visible.



Current work: GERB-4

Date range: January 2018 to present.

Problems addressed:

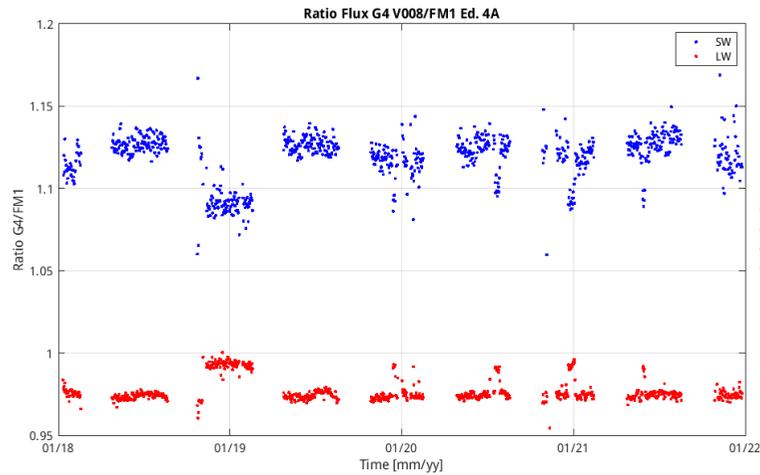
- quartz filter operating anomaly
- column displacement

After a detailed analysis by RMIB/RAL/IC, GGSPS have reprocessed the complete GERB-4 record to L1.5N, and RMIB are reprocessing to L2. A first version for internal checks is available, but not yet publicly.

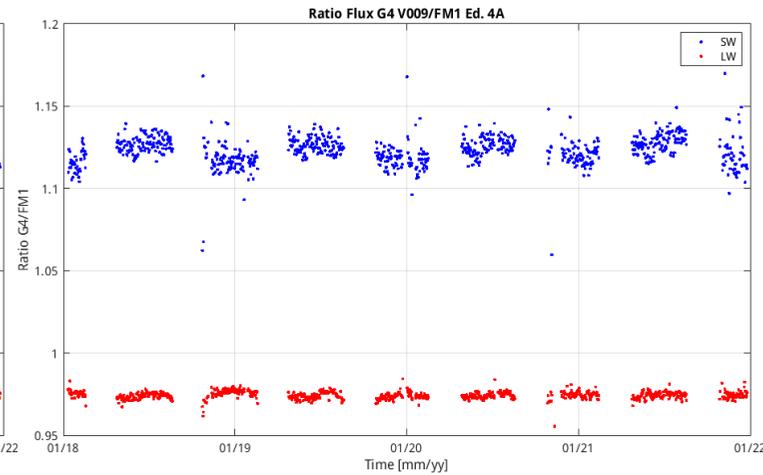
The status of the other GERB L2 products is currently the same as the last status update.



GERB-4 QF Anomaly correction



before QF correction



after QF correction

Other developments (GGSPS)

- GGSPS are implementing a solution to address the different response of the GERB de-spin mirror faces in L1.5N (under test)
- GGSPS are working on the handling of anomalies in the GERB-4 data set (e.g., stray light, anomalous pixels)

These developments have not (yet) been ingested in the current RMIB L2 processing.

L3 products

The L3 products (monthly, daily, monthly mean diurnal cycle) are not official GERB products, but are available from the following two sources:

- available in CM SAF (generated by RMIB, up to 2015)
- Obs4MIPs (generated by RAL/IC, 2007-2012)

GERB L3 products are generated from GERB Edition-1 High Resolution.

L3 Obs4MIPs (RAL/IC)

After the initial release of GERB 1 obs4MIPs monthly hourly average products in April 2021, we are working on producing an updated monthly diurnal product for obs4MIPs from the GERB 1 and GERB 2 data records. The update will address the impact of missing GERB observation on the record, using GERBlike observations, adjusted to GERB, to fill hours where GERB observations are missing. The result should improve the completeness and accuracy of the monthly hourly average products.



RGP infrastructure

RMIB are re-evaluating their hardware and infrastructure needs following a relocation to a different building.

Emergency relocation of the file server after an airconditioning failure. (The file server is in the process of being moved as we speak.)

We will rely more on services provided by the Institute in the future, and have started the transition.



Summary and outlook

- RMIB is working behind the scenes on a big update of software and hardware
- A first version, not fully validated, of GERB-4 L2 data (2018-2022) by Q4 2022
- GGSPS have reprocessed GERB-4 with a correction for the Quartz Filter anomaly
- GGSPS are working on addressing despin mirror side response difference
- Monthly hourly averages for GERB-1 have been published in Obs4MIPs
- RAL/IC are working on an update for Obs4MIPs, filling in missing observations



Thank you!